

Abstract

A solid-cage ambient-pressure PEM fuel cell stack having internal manifolds for the fuel gas and configured for accepting oxidant gas and cooling fluid via external manifolds/plena is disclosed. The fuel cell stack is contained in a solid cage comprised of a bottom end plate, a top end plate and four L-shaped struts. Each strut is attached at each end to a corner of the end plates so as to form a rigid rectangular parallelepiped cage, within which the fuel cell stack is contained. A pressure plate is disposed between the fuel cell stack and the top end plate. The pressure plate may be displaced downwards, typically by way of an array of jack screws, so as to compress the fuel cell stack between the pressure plate and the bottom end plate. The vertical corners of the fuel cell stack engage the inside corners of the struts to further support the fuel cell stack.